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| APPLICATION NO.      | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------|-------------|----------------------|---------------------|------------------|
| 10/782,574           | 02/18/2004  | Ho Lu                | JCLA12196           | 4739             |
| 23900                | 7590        | 06/03/2005           | EXAMINER            |                  |
| J C PATENTS, INC.    |             |                      | KOVAL, MELISSA J    |                  |
| 4 VENTURE, SUITE 250 |             |                      | ART UNIT            |                  |
| IRVINE, CA 92618     |             |                      | PAPER NUMBER        |                  |
|                      |             |                      | 2851                |                  |

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EF

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/782,574             | LU ET AL.           |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Melissa J. Koval       | 2851                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to because in Figure 7, for example, only one of three wire grid polarizers, element number 616, is labeled. Similarly only one of the liquid crystal reflection panels, element number 618, is labeled. Applicant should carefully review all of the Figures to make sure that all elements are labeled by numerical reference in accordance with their description in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

The disclosure is objected to because of the following informalities: On page 2, line 15, of the specification, the word - - when - - is incorrectly spelled "wen". Applicant should carefully check the specification for similar problems with respect to spelling and/or grammar.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Roddy et al. U.S. Patent 6,769,772 B2.

See Figure 8 of Roddy et al. '772 B2, for example.

Claim 1 sets forth: "An optical projection system (display apparatus 10), capable of receiving a first light beam, a second light beam, and a third light beam, the projection system comprising (See the blue, red and green light paths shown in Figure 8.):

a color-combination prism, allowing the light beams to respectively enter three surfaces of the color-combination prism, so as to form a mixed beam to emit out from

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another surface (See X-cube 32.);

a projection lens set, for receiving the mixed beam for projection (projection lens 10); and

each of the light beams comprising:

a liquid crystal reflection panel (See spatial light modulators 20r, 20g and 20b, for example. Also see column 15, lines 27 through 58, of '772 B2.); and

a wire grid polarizer (WGP) (See polarizing beamsplitters 18r, 18g and 18b, for example. Also see column 13, lines 8 through 17.),

wherein the liquid crystal reflection panels are parallel to the corresponding entering three surfaces, wherein before the light beams enter the color-combination prism, the polarized light beams are reflected by the WGPS onto the liquid crystal reflection panels and then the liquid crystal reflection panels reflect the light beams respectively with another polarization state, so as to pass through the WGPS and propagate directly toward the color-combination prism." See Figure 8.

Claim 2 sets forth: "The optical projection system of claim 1, wherein each of the WGPS allows a light component with a first polarization state to pass, and reflects a light component with a second polarization state." See how wire grid polarizers 18 cooperate with polarizers 13. Note that the functional language recited after wherein that does not define any structure then does not further limit the claim. Apparatus claims must be structurally distinguishable from the prior art (MPEP 2114). Hence the functional language recited in the claims cannot serve to distinguish over the prior art nor further limit the claimed apparatus.

Claim 3 sets forth; "The optical projection system of claim 1, wherein each of the liquid crystal reflection panels includes a plurality of pixels, whereby an incident polarization state with respect to each of the pixels can be changed to the desired polarization state, so as to transmit the WGPS." See column 16, lines 5 through 40.

Claim 4 sets forth: "The optical projection system of claim 3, wherein the liquid crystal reflection panels provide an image pattern by changing the polarization state." See column 15, lines 58 through 67. Also see Figures 9A through 10b.

Claim 5 sets forth: "The optical projection system of claim 1, wherein the color-combination prism includes an X-cube." Again see X-cube 32.

Claim 8, sets forth: "The optical projection system of claim 1, wherein a light path of each of the light beams includes a polarizer, whereby the light beams are first reflected to the WGPS." Again refer to Figure 8.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. U.S. Patent 6,666,556 B2.

See Figure 1a of '556 B2, for example.

Claim 1 sets forth: "An optical projection system (projection system 10), capable of receiving a first light beam, a second light beam, and a third light beam, the projection system comprising (See red, green and blue beams as shown in Figure 1a.):

a color-combination prism, allowing the light beams to respectively enter three surfaces of the color-combination prism, so as to form a mixed beam to emit out from another surface (image combiner 27);

a projection lens set, for receiving the mixed beam for projection; and  
each of the light beams comprising (See column 12, lines 36 through 43.):

a liquid crystal reflection panel (See transmissive arrays 16a-16c. Also see column 11, lines 12 through 26.); and

a wire grid polarizer (WGP) (See WGP-PBSs 14a-14c.),

wherein the liquid crystal reflection panels are parallel to the corresponding entering three surfaces, wherein before the light beams enter the color-combination prism, the polarized light beams are reflected by the WGPS onto the liquid crystal reflection panels and then the liquid crystal reflection panels reflect the light beams respectively with another polarization state, so as to pass through the WGPS and propagate directly toward the color-combination prism." See Figure 1a.

Hansen et al. '556 B2 teach all of the elements of claim 1 except that Hansen et al. make use of transmissive rather than reflective liquid crystal devices. However Hansen et al. '556 B2 teach that both are well known in the art. The BACKGROUND OF THE INVENTION of '556 B2 gives a lengthy discussion of the history of use of wire grid

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polarizers in various image projection systems that make use of a variety of components including those that form an image.

Therefore, in view of the teaching of Hansen et al. '556 B2, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute reflective liquid crystal panels for transmissive ones as shown by '556 B2, thus meeting the limitations of claim 1. The motivation for one having ordinary skill in the art to make such a substitution would be determined by the size, complexity and quality of the projection system desired.

Claim 2 sets forth: "The optical projection system of claim 1, wherein each of the WGPS allows a light component with a first polarization state to pass, and reflects a light component with a second polarization state." See how wire grid polarizers 14a-14c cooperate with polarizers 26a-26c. Note that the functional language recited after wherein that does not define any structure then does not further limit the claim. Apparatus claims must be structurally distinguishable from the prior art (MPEP 2114). Hence the functional language recited in the claims cannot serve to distinguish over the prior art nor further limit the claimed apparatus.

Claim 3 sets forth: "The optical projection system of claim 1, wherein each of the liquid crystal reflection panels includes a plurality of pixels, whereby an incident polarization state with respect to each of the pixels can be changed to the desired polarization state, so as to transmit the WGPS." In view of the arguments applied in the rejection of claim 1, as set forth above, refer to column 11, lines 58 through 67, and



column 12, lines 1 through 17. Claim 4 is rejected for the same reasons already applied to claim 3. Also see column 16, lines 13 through 26.

Claim 5 sets forth: "The optical projection system of claim 1, wherein the color-combination prism includes an X-cube." Again refer to column 12, lines 36 through 43.

Claim 6 sets forth: The optical projection system of claim 1, further comprising a first color splitter, to split a light source into a first primary color beam and a color mixing beam." See dichroic mirror 24.

Claim 7 sets forth: "The optical projection system of claim 6, further comprising a second color splitter, to split the color mixing beam into a second primary color beam and a third primary color beam." See Figure 1a and column 11, lines 26 through 40.

Claim 8 sets forth: "The optical projection system of claim 1, wherein a light path of each of the light beams includes a polarizer, whereby the light beams are first reflected to the WGPS." In view of the remarks applied in the rejection of claim 1, above, again refer to Figure 1a.

Claim 9 sets forth: "The optical projection system of claim 1, wherein the liquid crystal reflection panels includes a liquid crystal on silicon (LCOS) panel." LCOS panels are discussed in column 1, lines 34 through 53, of '556 B2.

Claims 10 through 14 are rejected for the same reasons already applied in the rejection of claims 1 through 9, as set forth above.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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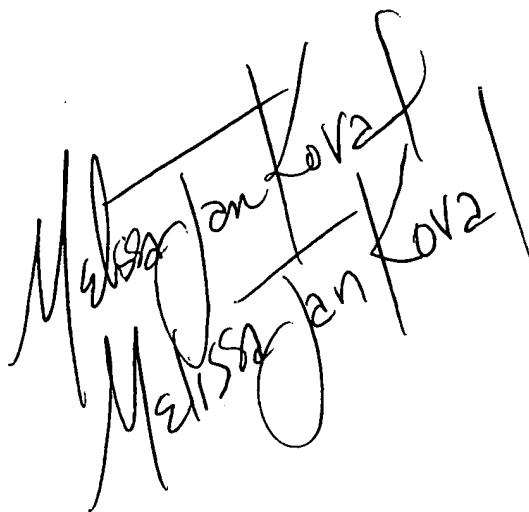
Nakashima et al. U.S. Patent Application Publication US 2004/0066492 A1 teaches a projection type image display apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J. Koval whose telephone number is (571) 272-2121. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJK

Handwritten signature of Melissa J. Koval, appearing twice in a cursive script.